

Bartram's Ixia, *Salpingostylis (=Sphenostigma) coelestinum* a Rare Endemic Plant Species of North Florida.

Kenneth R. Langdon¹ and Nancy C. Coile¹

INTRODUCTION: To see these rare plants in flower, you must get your feet wet with dew because the plants bloom soon after the light of dawn and close before noon. According to Small (7), flowering is mostly over by 9 o'clock. However, flowers of Bartram's Ixia can remain open longer on cloudy days. Time of the year is also important, because the flowering season is May and June. The territory where you dampen your shoes is significant because this endemic is limited to a small area of northeast Florida centering on Clay County and extending into most of the adjacent counties.

Photograph #56 in the "Wildflowers of Florida" brochure (3) is Bartram's Ixia and was taken by the senior author in Clay County, SE of Penny Farms. The photograph presents a lovely 2 inch wide lavender-blue flower with 3 petals and 3 petal-like sepals (6 tepals). The specific epithet of the species refers to the heavenly blue color of the perianth.

This rare species, currently known as *Salpingostylis coelestinum* (Bartram) Small, is a member of the Iris family. William Bartram introduced the species as *Ixia caelestina* [sic] in 1791 by using seven descriptive words and an illustration (6). Because the genus *Ixia* is known to occur naturally only in Africa, botanists began to switch Bartram's Ixia into several different genera in an attempt to clear up the taxonomic problems. The species



Fig. 1. Close up of individual flower of Bartram's Ixia.

¹Retired Botanist and Botanist, respectively, Office of Systematic Botany, P.O. Box 147100, Gainesville, FL 32614-1700.

remained largely unknown in the wild, primarily because of early flower closing, until it was rediscovered in 1931 by John K. Small who was led to a population in Clay County by botanists from the University of Florida. To accommodate the unusual species, Small erected a new genus, *Salpingostylis*. Foster (1945) recognized the distinctive characteristics of the anthers and the style and placed our species into the genus *Sphenostigma*, a genus whose other species are in Mexico and South America. Since *Sphenostigma* became the seventh genus into which the species had been placed, Foster stated that he regretted the necessity of moving the species yet another time. You may have seen *Sphenostigma* used for Bartram's Ixia, but that entire genus has been changed to *Gelasine*. According to Dr. Peter Goldblatt of the Missouri Botanical Garden (2), Small's *Salpingostylis* may be used until the taxonomy of the group is clarified.

DESCRIPTION: Plant from a bulb-like corm, about 1.5 cm diameter, with dark brown covering; basal leaves 1-3, rarely 4, usually narrowly linear, plicate, glabrous, sheathing at the base, up to 30 cm long and 1-4 mm wide; cauline leaves 1 or 2, 2.5-9 cm long and 1-2 mm wide; scape erect, simple or rarely branched, terete, 18-36 cm tall; inflorescence 1 or 2 flowered with 2 bracts, the outer 2.5-4 cm long, the inner 4-5.5 cm long, both acute, convolute; pedicels recurved at anthesis placing flowers lateral to scape, erect in fruit; flowers listed by different authors variously as blue, blue-purple, lavender, lavender-violet, or violet, usually with a white eye, 5 cm across; tepals 6, subequal, obovate, obtuse, 3.5 cm long, 1.7 cm wide; filaments free, about 4 mm long, anthers about 5 mm long, sagittate at base; style about 8 mm long, declined, stigma lobes 3, about 3 mm long, reniform with ciliate teeth, stigma and style together trumpet-shaped; ovary inferior, glabrous, oblong-clavate, about 3 mm long; mature capsule ellipsoid, 1.5-2 cm long, seeds brick-red or dark brown, angular, about 2.5 mm long.



Fig. 2. Habitat view showing numerous Bartram's Ixia plants in flower.

DISTRIBUTION AND HABITAT: Clay and Bradford counties are at the center of the distribution with populations also occurring in adjacent Union, Baker, Duval, St. Johns, and Putnam counties. The plants grow in moist grassy flatwoods subject to periodic burning. If fire is withheld, these areas become covered with dense grasses, herbs and brush, with the result that *Salpingostylis* ceases to flower. In the season following a fire, *Salpingostylis* will again flower abundantly, because the bulbs were well protected in the soil. Any disturbance of the habitat, except fire or occasional mowing, appears to be destructive to the plants.

Bartram's *Ixia* is listed as "Endangered" by the Florida Department of Agriculture and Consumer Services (4) and as "Threatened" by the Florida Committee on Rare and Endangered Plants and Animals, Volume 5 (8). Changing land use is why it was listed as threatened. For example, Dr. Ward states that the site where Small rediscovered the species is now an automobile junk yard. Most other documented populations along the St. Johns River are now pastureland or used for crops. Elsewhere, populations have been impacted or destroyed through lumbering, agriculture, and plantations of slash pine. However, the species was withdrawn from the Federal Register (2) where it had been under consideration for listing as federally endangered. The main reasons for withdrawing the species from federal consideration were that Bartram's *Ixia* persisted in pine plantations and that the largest populations occurred in counties which lacked immediate urbanization pressures. However, the U. S. Fish and Wildlife Service also stated that there is a need to better understand the response of the plant to management practices. The Service plans to work with the foresters in monitoring the long-term response of Bartram's *Ixia* to the forest management practices.

Salpingostylis coelestinum is easily grown from seeds obtained from wildflower suppliers and is well suited for rock gardens, flower beds and greenhouse cultivation (1). Plants may bloom in the second year from seed sowing. The soil should be fertile, sandy, somewhat acid, with humus, and well-drained but moist. Plants die back after seeds are mature, but the plants will return the next year from the gladiolus-like corm.

LITERATURE CITED:

1. Everett, T. H. (ed.) 1982. The New York Botanical Garden Illustrated Encyclopedia of Horticulture, Volume 9. Garland Publ. Company, NY.
2. Federal Register. 1990. Endangered and threatened wildlife and plants; withdrawal of proposed rule to list the plant *Salpingostylis coelestina* (Bartram's *Ixia*) as endangered. 50 CFR Part 17. Vol. 55 (218) Nov. 9, 1990. U. S. Department of the Interior, Fish and Wildlife Service.
3. Florida Department of Agriculture and Consumer Services. 1989. The Wildflowers of Florida, Document #PI89G-05.
4. Florida Department of Agriculture & Consumer Services. 1991. Rules of the Department of Agriculture and Consumer Services, Division of Plant Industry, Chapter 5B-40, Preservation of Native Flora of Florida. 3 December 1991.
5. Foster, R. C. 1945. Studies in the Iridaceae-III, Part II. The North American species of *Sphenostigma* Baker. Contributions, Gray Herbarium, Harvard Univ. 155:9-17.
6. Harper, F. 1967. The Travels of William Bartram. Yale University Press, New Haven, CN. 727 p.
7. Small, J. K. 1931. Bartram's *Ixia coelestina* rediscovered. Journal of the New York Botanical Garden 32:155-161.
8. Ward, D. B. 1979. Volume Five: Plants. IN: Rare and Endangered Biota of Florida, P. C. Pritchard (ed.) University Presses of Florida, Gainesville, FL. 175 p.